

WHAT IS CLAIMED IS:

1. A method for transporting traffic having disparate qualities of service across a packet-switch network, comprising:

5 receiving at an ingress point of a network a plurality of packets each comprising a quality of service (QoS) class defined externally to the network;

combining packets having a QoS class comprising delay bound guarantees and a low drop priority into a
10 first internal QoS class;

combining packets having a QoS class comprising a flexible drop priority and no delay bound guarantees into a second internal QoS class;

combining packets having a QoS class comprising no
15 delivery guarantees into a third internal QoS class; and

transporting the packets through the network based on their internal QoS classes.

2. The method of Claim 1, wherein the first
20 internal QoS class comprises a guaranteed service class, further comprising combining into the guaranteed service class packets having an externally defined integrated services guaranteed service QoS and a differentiated services expedited forwarding QoS.

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3. The method of Claim 1, wherein the second internal QoS class comprises a control load class, further comprising combining into the control load class packets having an externally defined integrated services
30 control load QoS and a differentiated services assured forwarding 1, 2 and 3 QoS.

4. The method of Claim 1, wherein the third
internal QoS class comprises a best-effort class, further
comprising combining into the best-effort class packets
having a differentiated services assured forwarding 4 QoS
5 and a differentiated services best-effort QoS.

5. The method of Claim 1, wherein the packets
combined into the first internal QoS class comprise low
latency delay-bound guarantees.

10 6. The method of Claim 1, further comprising
generating a label for each packet including the internal
QoS class for the packet and transporting the packet
through the network using the label.

15 7. The method of Claim 1, wherein the packets
comprise internet protocol (IP) packets.

8. The method of Claim 1, wherein packets combined
20 into the first internal QoS class comprise real-time
data.

9. The method of Claim 1, wherein the packets
combined into the first internal QoS class comprise real-
25 time voice data.

10. A system for transporting traffic having disparate qualities of service across a packet-switch network, comprising:

means for receiving at an ingress point of a network
5 a plurality of packets each comprising a quality of service (QoS) class defined externally to the network;

means for combining packets having a QoS class comprising delay bound guarantees and a low drop priority into a first internal QoS class;

10 means for combining packets having a QoS class comprising a flexible drop priority and no delay bound guarantees into a second internal QoS class;

means for combining packets having a QoS class comprising no delivery guarantees into a third internal
15 QoS class; and

means for transporting the packets through the network based on their internal QoS classes.

11. The system of Claim 10, wherein the first
20 internal QoS class comprises a guaranteed service class, further comprising means for combining into the guaranteed service class packets having an externally defined integrated services guaranteed service QoS and a differentiated services expedited forwarding QoS.

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12. The system of Claim 10, wherein the second internal QoS class comprises a control load class, further comprising means for combining into the control load class packets having an externally defined
30 integrated services control load QoS and a differentiated services assured forwarding 1, 2 and 3 QoS.

13. The system of Claim 10, wherein the third internal QoS class comprises a best-effort class, further comprising means for combining into the best-effort class packets having a differentiated services assured forwarding 4 QoS and a differentiated services best-effort QoS.

14. The system of Claim 10, wherein the packets combined into the first internal QoS class comprise low latency delay-bound guarantees.

15. The system of Claim 10, further comprising means for generating a label for each packet including the internal QoS class for the packet and transporting the packet through the network using the label.

16. The system of Claim 10, wherein the packets comprise internet protocol (IP) packets.

20 17. The system of Claim 10, wherein packets combined into the first internal QoS class comprise real-time data.

25 18. The system of Claim 10, wherein the packets combined into the first internal QoS class comprise real-time voice data.

19. A system for transporting traffic having disparate qualities of service across a packet-switch network, comprising:

logic encoded in media; and

5 the logic operable to receive at an ingress point of a network a plurality of packets each comprising a quality of service (QoS) class defined externally to the network, to combine packets having a QoS class comprising delay-bound guarantees and a low drop priority into a
10 first internal QoS class, to combine packets having a QoS class comprising a flexible drop priority and no delay bound into a second internal QoS class, and to combine packets having a QoS class comprising no delivery guarantees into a third internal QoS class.

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20. A local interface for a packet-switched network node, comprising:

- 5 a port operable to receive a plurality of packets each comprising a quality of service (QoS) class defined externally to a network of the node and to combined packets having QoS classes comprising delay-bound guarantees and a low drop priority into a first internal QoS class, to combine packets having a QoS class comprising a flexible-drop priority and no delay bound
- 10 guarantees into a second internal QoS class and to combine packets having a QoS class comprising no delivery guarantees into a third QoS class and to buffer the packets in buffers corresponding to their internal QoS classes; and
- 15 a scheduler operable to schedule transmission of the packets out of the buffers for transmission over the network based on their internal QoS class.